Small Electric Winnower, DIY

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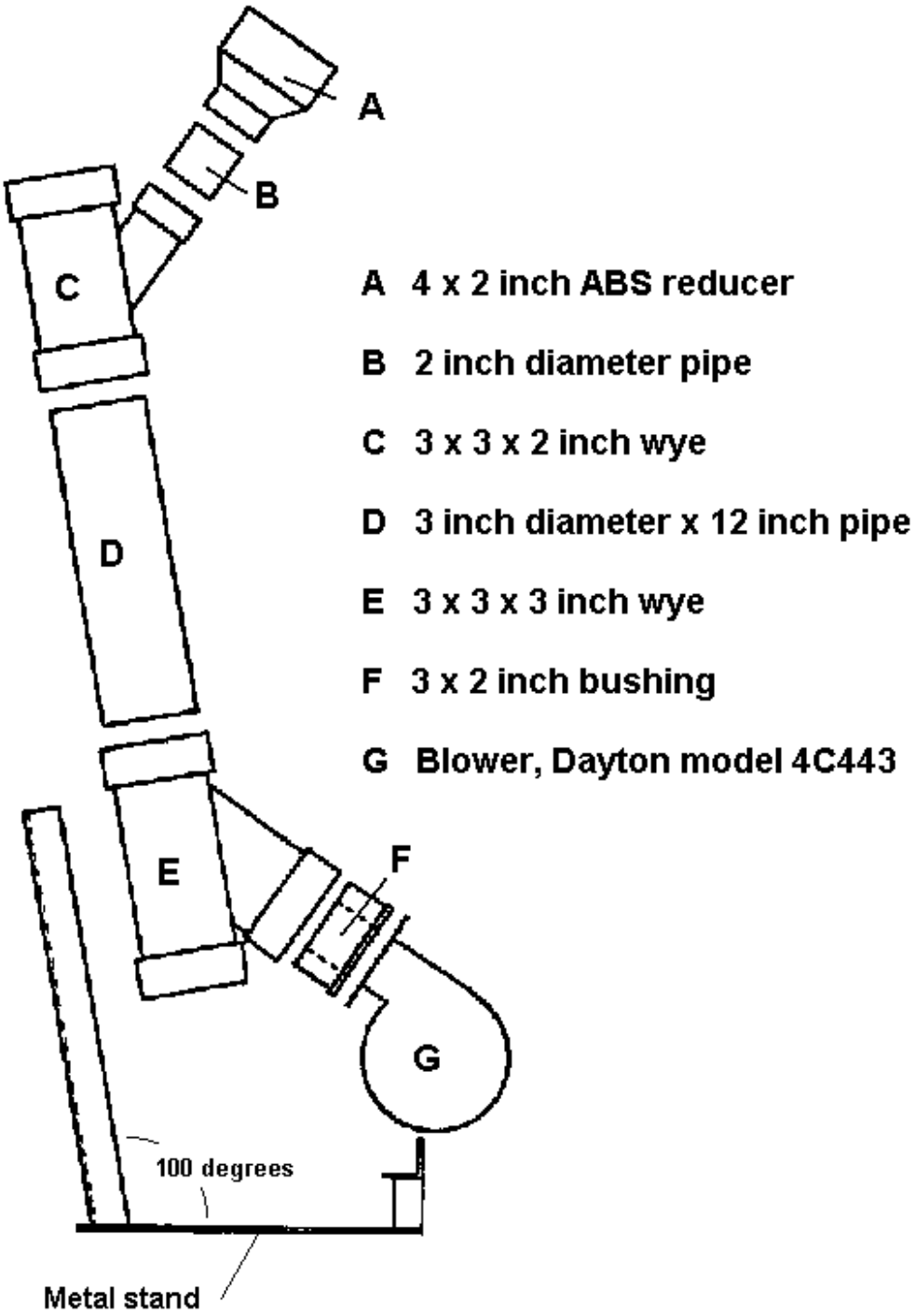

Figure 1. Small electric winnower with metal stand.

Operation:
The winnower separates seeds from chaffs by blowing the less dense chaff away from the seeds as the seeds fall down a column of air. Seed and chaff mixture is placed in the winnower inlet (A). Seeds and denser material drop down the air column (C, D and E) and exit at the bottom (E). Less dense material enters the air column at “C” and is blown out through the top (C). The blower (G) pushes air in at (F) and out through the top (C). The airflow is regulated with a baffle that partially blocks the air exhaust on the blower (G, Dayton 4C443). A baffle can be made by cutting a 1-inch slot on the side of F, insert a 1-inch metal plate into the slot to partially block the exhaust air from the blower.

Version 2

Figure 2. Changes made to original design indicated by arrows:

A clear polycarbonate tube provides visibility to materials being winnowed. An 89 mm outside diameter x 150 mm long (nominal 3 inch x 6 inch) tube fits 3 inch ABS or PVC wye connector; or use a 90 mm outside diameter x 150mm tube and sand outside of tube to reduce the diameter for a tight fit (available at Amazon.com).

A variable speed DC blower provides air flow control. Shown here is a Hon & Guan 3 inch inline blower with 24V DC variable speed controller using 120V AC adapter providing 120 cfm air flow and 308 Pa air pressure (available at Amazon.com)